ZVS-MSI-xx

MEYERTECH
SECURITY with VISION

USER MANUAL

ZoneVu

ZVS-MSI-xx

Serial Peripheral Interface
Issue 06

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Introduction

Thank you for purchasing Meyertech's ZVS-MSI-xx. Please read this user guide prior to using this product. It will help you to achieve the maximum benefit from the product. The manual covers installation and operation of the ZVS-MSI-xx.

What is a ZVS-MSI-xx?

The ZVS-MSI-xx is part of the ZoneVu CCTV Control family. It has two distinct modes of operation, a multi-channel serial interface to a range of 3rd party equipment or a network expander allowing up to 192 receivers to be added per ZVS-MSI-48.

The product comes in two variations a ZVS-MSI-48 and a ZVS-MSI-23.

The ZVS-MSI-48 has it's serial interfaces configured as RS422 / 485 drivers.
The ZVS-MSI-23 has it's serial interfaces configured as RS232 drivers.

Within each unit exists a number of ZVS-EFD (embedded firmware drivers). These drivers are purchased and installed to match your application and include VCR/ DVR interfaces, 3rd party dome and receiver interfaces, time source interfaces and 3rd party matrix interfaces.

KEY FEATURES

- 19" Rack Mounted
- Compatible with the ZoneVu product range
- Supports a range of third party equipment including VCRs / DVRs, multiplexers, domes / receivers, real time clocks and matrixes.
- Allows extra fully functional receivers or domes to be added to a system.
- In a network expander mode each device supports up to 192 receivers.
- Used with a Meyertech site controller system, up to 4096 receivers or domes can be driven by adding extra ZVS-MSI-xxs.
- Three independent control ports
- Diagnostic LEDs
- Configuration and backup via Meyertech's Mpower software
- 16-bit embedded processing power

The features described in this manual refer to :

Version 1.27.0.0 of the ZVS-MSI-xx firmware

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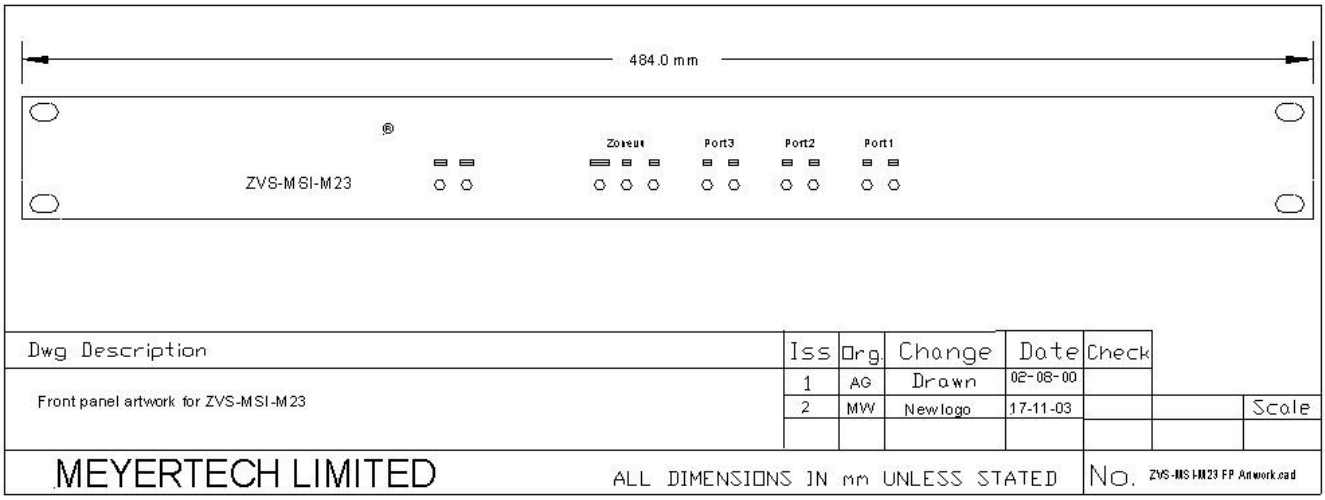
ZVS-MSI-xx LAYOUT



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Front Panel Indicators

- **+5V**
  Indicates that power is present

- **CPU**
  Indicates the current state of the processor.

  1. Steady flashing indicates all is well.

  2. A combination of long and short pulses on power up, then the processor has detected a memory problem and Meyertech technical support should be contacted.

  3. If the CPU LED flashes rapidly then this indicates that it is in configuration mode (see the Configuration section of this manual).

- **ZVM – TERM**
  Indicates the status of the internal RS422 termination resistor. This is configurable.

- **ZVM – TX**
  Indicates communications being transmitted by the ZVS-MSI-xx on the ZVM port.

- **ZVM - RX**
  Indicates communications being received by the ZVS-MSI-xx on the ZVM port.

- **Port 3 – TX**
  Indicates communications being transmitted by the ZVS-MSI-xx on the RS422/485/232 port 3.

- **Port 3 - RX**
  Indicates communications being received by the ZVS-MSI-xx on the RS422/485/232 port 3.

- **Port 2 – TX**
  Indicates communications being transmitted by the ZVS-MSI-xx on the RS422/485/232 port 2.

- **Port 2 - RX**
  Indicates communications being received by the ZVS-MSI-xx on the RS422/485/232 port 2.

- **Port 1 – TX**
  Indicates communications being transmitted by the ZVS-MSI-xx on the RS422/485/232 port 1.

- **Port 1 - RX**
  Indicates communications being received by the ZVS-MSI-xx on the RS422/485/232 port 1.

Rear Panel

See the ZVS-MSI-xx Installation manual for rear panel arrangement and wiring connection details.

Features

The ZVS-MSI-xx comes in two different build options. The ZVS-MSI-23 model is populated for RS232 drivers on it's interface ports whilst the ZVS-MSI-48 model is populated for RS422/485 drivers on it's interface ports. Either RS422 or RS485 can be selected using the Mpower configuration tool on this model.

The ZVS-MSI-xx can be used as a 3rd party interface (for devices which support RS485 / RS422 or RS232) or as a receiver network expander. The types of peripherals that the ZVS-MSI-xx support include:

- VCRs / DVRs
- Multiplexers
- Real time clocks
- Domes
- ZoneVu and 3rd party matrix
- ZoneVu and 3rd party receivers

3rd Party Equipment Driver

A current list of the 3rd party equipment currently supported, including details of the features supported on the devices, can be obtained from Meyertech sales.

The tables below show which port on the system controller should be connected to the ZoneVu port of the ZVS-MSI-xx. (See installation guides for pin-outs)

For driving a 3rd party VCR / DVR, multiplexer, real time clock, display or Alarm panel:

Device	Port
ZSC-1000	ZVK port
ZSC-500	ZoneVu port
ZoneVu matrix	Keyboard network

For driving a 3rd party or ZoneVu matrix:

Device	Port
ZSC-1000	ZVM port or PC1 port
ZSC-500	ZoneVu or RS232 port

Notes:

(1) the ZoneVu port of the ZVS-MSI-xx must be configured to RS232 if connected to the PC1 port and switching should be routed to the PC1 on the ZSC.

For driving a 3rd party receiver or dome driver:

Device	Port
ZSC-1000	ZVR port
ZSC-500	ZVR port
ZoneVu Matrix	Receiver network

Notes:

(1) the receiver or dome must be routed to the same ZVR port that the ZVS-MSI-xx is connected to.

(2) To get alarms from receivers or domes (that support alarms) to report to the site controller, one or more receivers in the range of those configured to be on the ZVS-MSI-xx must be polled by the site controller (see table in the Receiver Network Expander section for guidance).

Receiver Network Expander

On large systems, where more controllable receivers or domes are required than is supported by a site controller (256 ZoneVu receivers) then multiple ZVS-MSI-xxs can be added to operate as network expanders.

Each ZVS-MSI-xx can support up to 64 (quarter load) receivers or domes per port (192 in total).

The ZoneVu port of the ZVS-MSI-xx should be connected to the following when used as a receiver network expander:

Device	Port
ZSC-1000	ZVR port
ZSC-500	ZVR port
ZoneVu Matrix	Receiver network

See the relevant installation guide for pin-outs.

To enable alarm reporting from a receiver through the ZVS-MSI-xx to a site controller, the ZVS-MSI-xx must be polled by the site controller which in turn polls it's receivers. This is achieved by polling the ZVS-MSI-xx for one or more of the receivers that are attached to it. Each poll of the Network Expander returns the next alarm status waiting to be reported – so it is not necessary to configure the site controller to poll all receivers connected to a Network Expander.

For optimum performance we recommend the following as a guide to how many times each ZVS-MSI-xx is polled by the site controller:

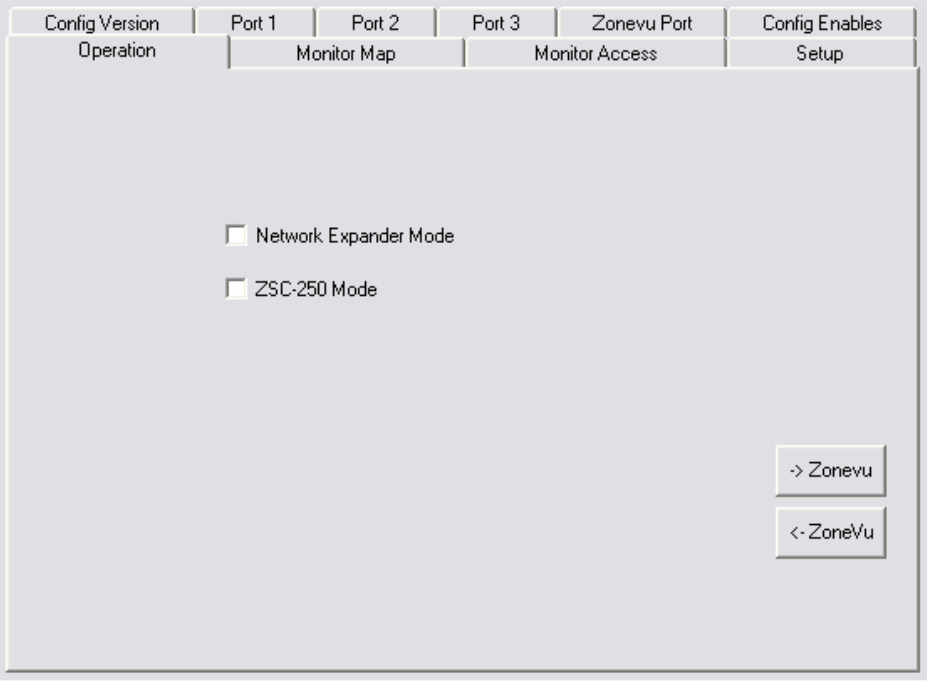
Receivers on Expander	Receivers Polled by ZSC
<10	1
10 to 64	4
65 to 128	8
129 to 192	12

Configuration

Mpower uses the RS232 connection on Port 3. This is always populated on both a ZVS-MSI-23 and a ZVS-MSI-48. To enable the Mpower operation, pins 4 and 5 must be shorted together. This should be done within the connector housing. When this lead is connected to port 3 the CPU LED will start to flash more rapidly.

Whilst this short is in place operation of the 3rd party protocol is suspended.

Operation



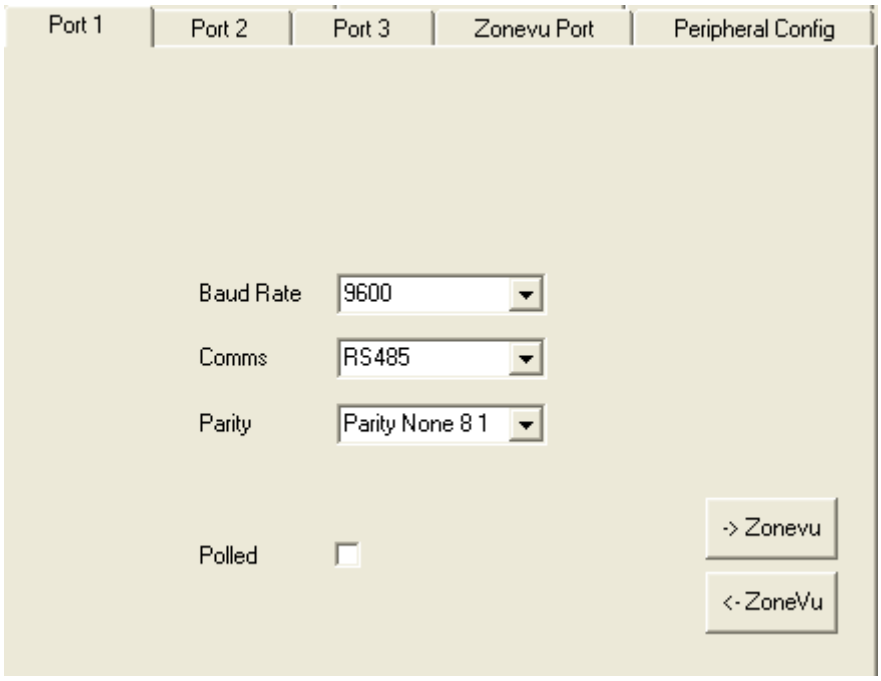
Network Expander Mode

This should be ticked if the ZVS-MSI-xx is to operate as a receiver or dome driver.

ZSC-250 Mode

Internal use only – MUST NOT BE MODIFIED.

Ports



*Baud Rate

Select a baud rate to match the attached equipment.

If the device is being used as a receiver driver, then this value should be set to the speed of the receiver network.

Valid baud rates on all ports are 1200, 2400, 4800, 19200, 28800, 38400, 57600 and 128000. Note that 1200 and 2400 appear at the end of the list.

Default = 9600

Comms

Defines the physical communications standard. If the device is a ZVS-MSI-23 this setting should not be altered. If the device is an ZVS-MSI-48, valid settings are RS485 or RS422.

ZVS-MSI-48 Default = RS422
ZVS-MSI-23 Default = RS232

*Parity

Select a parity setting to match the attached equipment.

Default = Parity None 8 1

Polled

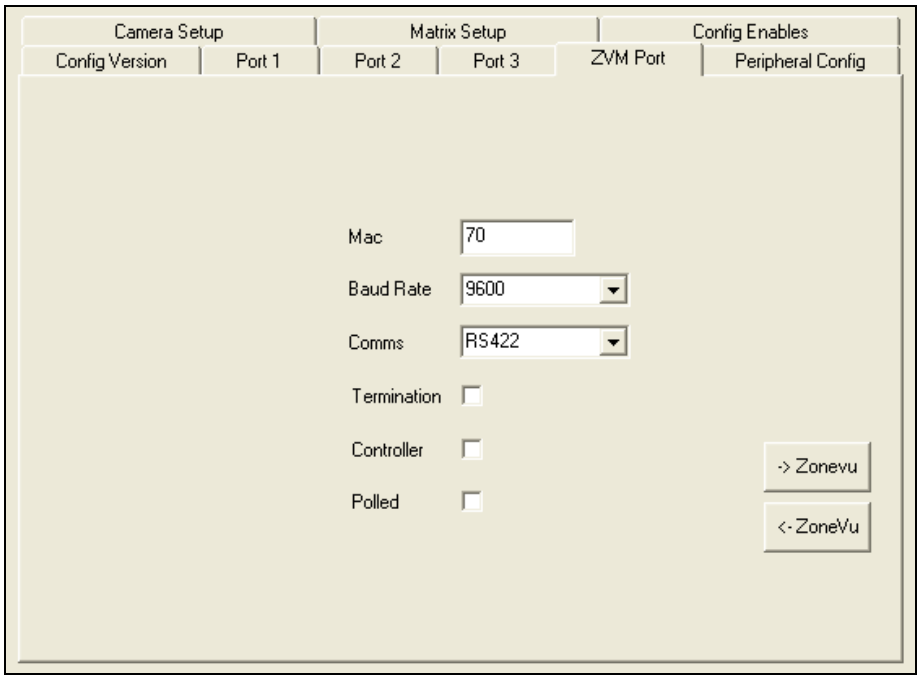
This value should be ticked if the port is being polled by a third party device.

Default = FALSE

***Note**

Settings marked with an asterisk will be overwritten with a default appropriate to the selected protocol / type when writing to the *Peripheral Config* page. To override the defaults, ensure the *Periphal Config* page is setup first.

ZVM Port



Mac

This is the Mac address that the ZVS-MSI-xx responds to. This only applies if the ZVS-MSI-xx is connected to the ZVM, ZVK or ZoneVu port of a site controller and is working as a 3rd party interface driver.

Default = 70

Baud Rate

This should be set to match the baud rate of the device that is controlling the ZVS-MSI-xx. If it is connected to the ZVK port (i.e. used as a peripheral interface) of a site controller the default is 9600. For all other applications check the setting of the port you are connecting to.

Default = 9600.

Comms

Defines the physical communications standard of the port. This should be set to the same as the port you are connecting to (e.g. RS422 for the ZVM / ZVK port of a site controller, RS232 for the PC port of a site controller).

Default = RS422

Termination

The state of the 120R line terminator

Default = Off

Controller

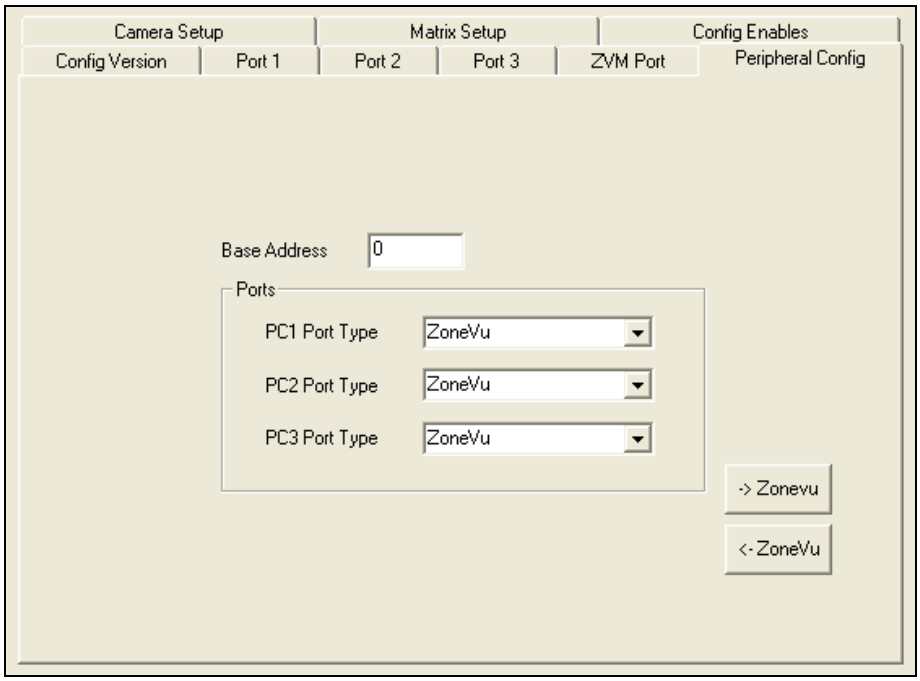
Unused.

Polled

If the port is required to be polled by another device. This setting would typically be set to on if the device is connected to the ZVR, ZVK, ZVM or ZoneVu port of a site controller.

Default = TRUE

Peripheral Config



This tab should only be used if the ZVS-MSI-xx is being used as a 3rd party interface.

Base Address

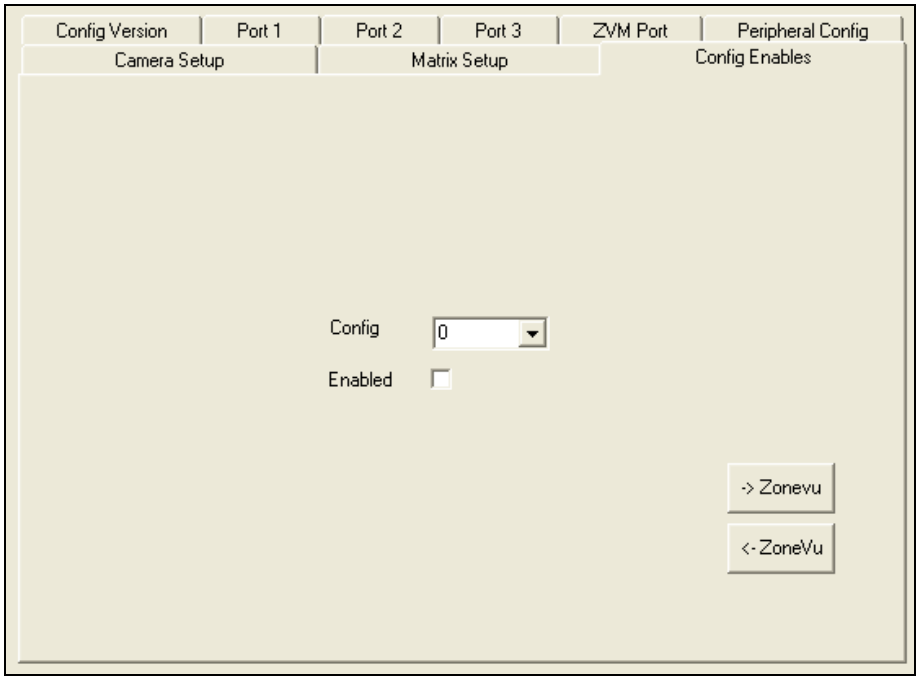
This is the base address of the unit. The device on the 1st port takes this address (e.g. if VCR 1 is connected to port 1 then the base address is 1 and port 2 and 3 will have devices 2 and 3. If VCR 4 is connected to port 1 then the base address is 4 and ports 2 and 3 will have devices 5 and 6)

Default = 1

Ports

Allows the protocol on the port to be changed. These value should not be modified without contacting Meyertech sales.

Config Enables



Select a config number 1 – 20 from the list and tick it's enable box to modify the behaviour of the ZVS-MSI-xx as follows :

Config 1 : Unused

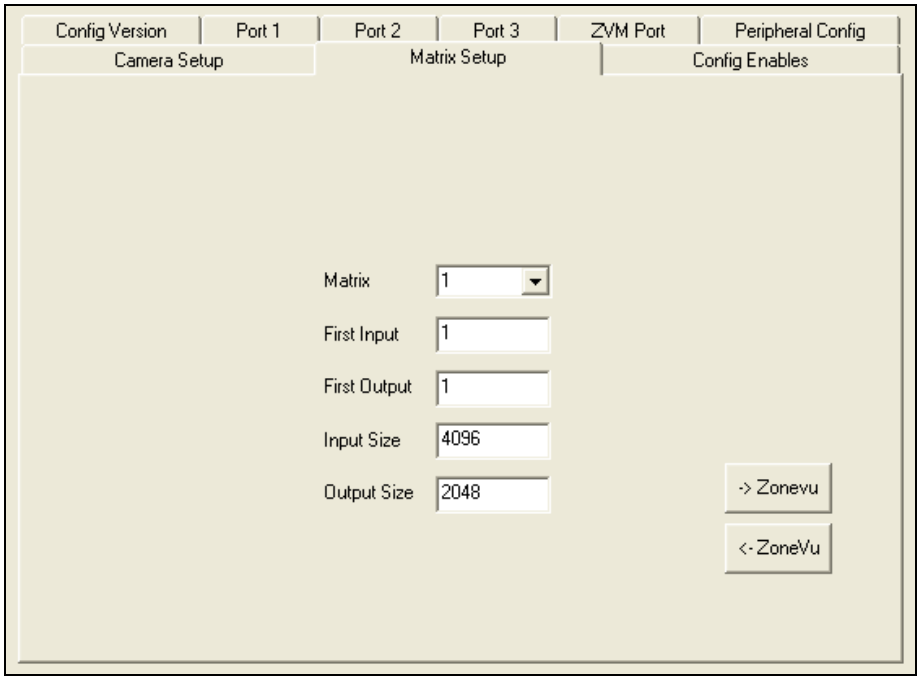
Config 2 : **Disable Memory Check**
Default = Disabled

Config 3 : **Pelco Extended Address Range**
Tick this option if you do not require strict compatibility with the Pelco 'P' protocol, and wish to extend the address range for Pelco 'P' devices from 32 to 255.
Default = Disabled

Config 4 : **Auto Alarm Clear on Coe Matrix**
Tick this option to automatically clear down all alarms when controlling a Coe matrix
Default = Disabled

Config 5 – 20 : Unused

Matrix Setup



This tab should only be used if the ZVS-MSI-xx is used to control a video matrix.

The ZVS-MSI-xx supports 3 independent matrix devices.

For each matrix, in the range 1 to 3, controlled by this unit, the following must be configured

1st Input

Input number that the matrix starts at

Default = 1(matrix 1)

1st Output

Output number that the matrix starts at

Default = 1 (matrix 1)

Input size

Size of the matrix in terms of inputs

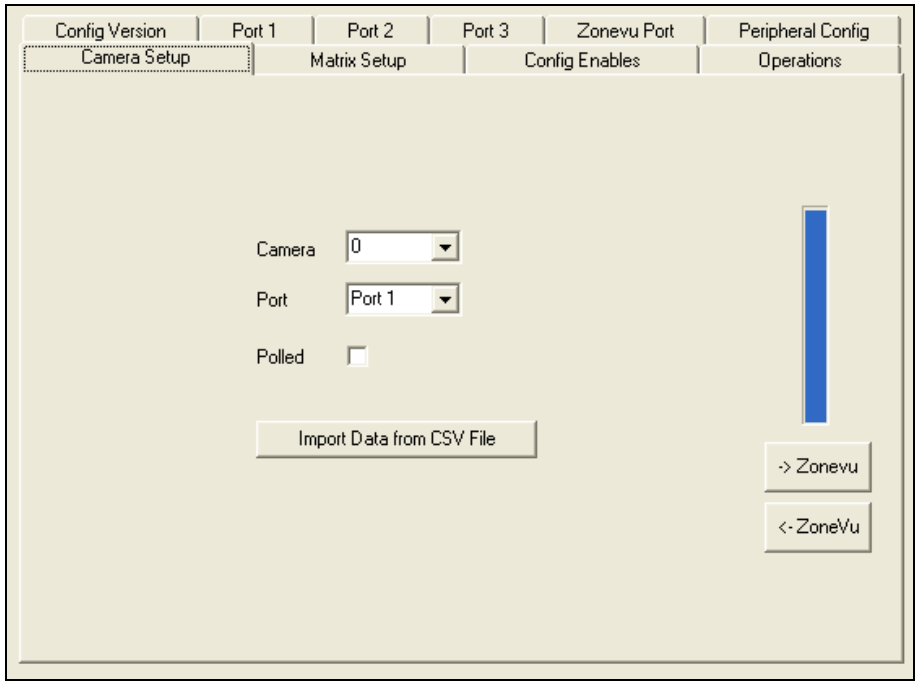
Default = 4096

Output size

Size of the matrix in terms of outputs

Default = 2048

Camera Setup



This tab is used to configure how cameras are distributed on the ports and if they are polled. A CSV file can be imported if required. The template is available on the Mpower distribution disk.

Camera

The current camera number you are applying the following settings to.

Port

The port that the current camera is on

Polled

Tick if the dome or receiver is polled by the ZVS-MSI-xx. If using 3rd party domes or receivers this feature may not be supported. See the “Supported protocols” document for more information.

Deliverables

The unit consists of the following components:

- ZVS-MSI-xx
- PSU for the ZVS-MSI-xx
- Single 2-part connector for the ZoneVu network
- Three 9-way D-type connectors for the 3rd party ports.

Safety Precautions

1. Carefully read this Product Manual prior to commencing installation and configuration.
2. Before working on this product power it down and remove the power leads. Removing panel's modules or PCB's may cause damage to the product and present an electric shock and fire hazard.
3. To reduce the risk of electric shock and fire hazard do not operate this product with panels or covers removed.
4. Do not install or operate the product near water.
5. Do not install or operate this equipment outdoors.
6. If work is carried out on the product with panels and covers removed ensure full electrostatic handling procedures are adhered to.
7. Louvers and openings are provided in the product enclosures for ventilation purposes to protect it from overheating. Under no circumstances block or cover these openings.
8. Ensure the product is operated in a suitably temperature controlled environment within the specification limits.
9. Do not operate the product in humidity greater then 90%.
10. Do not drop objects of any kind through the product louvers and openings. This may cause electric shock and fire hazard and product malfunction.
11. Avoid liquid spillages on the product. This may cause electric shock and fire hazard as well as product malfunction.
12. Never attempt to service this product yourself. This product contains no serviceable parts Refer all servicing requirements to the Meyertech Service Centre or appointed Meyertech Service Agent
13. Do not operate this product if
    - 13.1. Any product power leads are damaged.
    - 13.2. If the product has been exposed to rain.
    - 13.3. If the product has been dropped or the enclosure has been damaged.
    - 13.4. If liquid has been spilt on the product.
    - 13.5. If the appliance has malfunctioned or is not operating to its functional specification.
    - 13.6. If the products cooling fans fail to operate.
14. This product must only be operated with the power supply provided or if supplied without a power supply, by the type of power source indicated in the specification.
15. Follow all warnings and instructions marked on the product and in this manual.
16. To clean the enclosure of the product use a cloth. Do not use liquid solvent-based cleaners.

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Meyertech Limited is a member of the CCTV User Group.

Support

At Meyertech our staff understand quality support is important to you, vital in fact, which is why we place such a high precedence on providing it.

For all matters relating to support go to our website to find the information your require visit
http://www.meyertech.co.uk/support.html

Maintenance

The ZVS-MSI-xx requires no Planned Preventive Maintenance periods (PPM's) as it is mainly solid state in design.

The ZVS-MSI-xx contains no serviceable parts and should be returned to our Service Centre in Scunthorpe for repair or replacement under warranty. Any repairs, attempted repairs or replaced components not carried out by the Meyertech Service Centre will void all Meyertech warranties and liabilities.

If your ZVS-MSI-xx has to be returned to our Service Centre please follow the returns procedure below, otherwise delays may be incurred in returning or replacing the ZVS-MSI-xx.

Disposal

There are no additional requirements beyond safe working practice in the decommissioning of the Meyertech ZVS-MSI-xx.

However the ZVS-MSI-xx contains printed circuit boards populated with electronic components. The whole unit must be returned to Meyertech Service Centre for final disposal. Please follow the normal returns procedure.

Warranty

Please refer to Meyertech Limited 'Terms & Conditions of Sale of Goods & Services' for interpretation.

1. If the Buyer establishes to the Seller's reasonable satisfaction that there is a defect in the materials or workmanship of the Goods manufactured, then the Seller shall at its option, at its sole discretion and within a reasonable time,
    a. arrange for the repair or making good such defect or failure in such Goods free of charge to the Buyer (including all costs of transportation of any Goods or materials to and from the Buyer for that purpose),
    b. replace such Goods with Goods which are in all respects in accordance with the Contract, or subject, in every case, to the remaining provisions of this Condition 1 provided that the liability of the Seller under this Condition 1 shall in no event exceed the purchase price of such Goods and performance of anyone of the above options shall constitute an entire discharge of the Seller's liability under this warranty.

2. Condition 1 shall not apply unless the Buyer:

    a. notifies the Seller in writing of the alleged defect within 12 (twelve) months from delivery or such other period or periods as may be agreed in writing between the Seller and the Buyer, and
    b. allows the Seller a reasonable opportunity to inspect the relevant Goods.

3. For the avoidance of doubt, the Seller shall be under no liability under the warranty in Condition 1 above:
    a. where such defects arise from any drawing, design or specification supplied by the Buyer; or
    b. where such defects arise from fair wear and tear, wilful damage, or negligence of a party other than the Seller (or its employees or authorised personnel), abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), misuse or alteration or repair of the Goods without the Seller's approval; or
    c. where such defects arise in parts, materials or equipment which have not been manufactured or designed by the Seller but have been purchased at the Buyer's request by the Seller from the Buyer's designer and manufacturer or from some other third party (the **"Third Party Supplier").**
    d. if the total price of the Goods has not been paid by the due date for payment
    e. in respect of any type of defect, damage or wear specifically excluded by the Seller by notice in writing: or
    f. if the Buyer makes any further use of the Goods after giving notice in accordance with Clause 1

4. Any repaired or replaced Goods shall be redelivered to the Buyer free of charge to the original point of delivery but otherwise in accordance with and subject to these Conditions.

5. Alternatively to Condition 1 the Seller shall be entitled at its absolute discretion on return of the defective Goods to the Seller (at the Seller's request) to refund the price of the defective Goods in the event that such price shall already have been paid by the Buyer to the Seller, or, if such price has not been paid, to relieve the Buyer of all obligation to pay the sum by the issue of a credit note in favour of the Buyer in the amount of such price.

6. In respect of all Goods supplied to the Seller by a Third Party Supplier the Seller will on request pass on to the Buyer (in so far as reasonably possible) the benefit of any warranty given to the Seller by such Third Party Supplier and will (on request) supply to the Buyer details of the terms and conditions of such warranty and copies of any relevant product information sheets, technical data sheets or product leaflets issued by such Third Party Supplier and the Buyer shall be solely responsible to the entire exclusion of the Seller for complying with the same.

7. For the purposes of Condition 1 references to Goods shall be deemed to exclude software.

8. The Buyer acknowledges that software in general is not error-free and agrees that the existence of such errors in the Software Programs shall not constitute a breach of this Contract.

9. In the event that the Buyer discovers a material error which results in the Programmed Products not performing substantially in accordance with the Functional Specification, or the Licensed Programs not performing substantially in accordance with the relevant Program Documentation and notifies the Seller of the error within 90 days from the date of the Seller making available the respective software to the Buyer (the **`warranty period"**) the Seller shall at its sole option either refund the price which the Buyer has paid to the Seller (or if such price has not been paid, relieve the Buyer of all obligations to pay the sum) in respect of the respective software or use all reasonable endeavours to correct by patch or new release (at its option) that part of the software which does not so comply provided that such non-compliance has not been caused by any modification, variation or addition to the software not performed by the Seller or caused by its incorrect use, abuse or corruption of the software by use of the software with other software or on equipment with which it is incompatible,

10. To the extent permitted by English law, the Seller disclaims all other warranties, with respect to the software which it provides pursuant to the Contract, either express or implied, including but not limited to any implied warranties of satisfactory quality or fitness for any particular purpose.

11. The Buyer is solely responsible for various scanning the software that it receives from the Seller pursuant to the Contract.

12. The Seller warrants that it will use reasonable skill and care in providing the Services to the buyer